

ABSTRACT

An apparatus and method for detecting deflection and twisting rotation of an upright structure is provided. At least one laser device is positioned proximate to a first location on the structure. At least one target is positioned proximate to a second location on the structure. The at least one laser device emits parallel laser beams that strike the at least one target at reference locations that indicate a reference position for the upright structure. The laser beams are emitted either periodically or continuously. Any differences between the laser beam receipt locations and the reference locations are calculated to determine any lateral deflection and twisting rotation of the structure relative to the reference position from the first to the second location. The laser beams may be enclosed within a tube.